# LOCATION-BASED CREDENTIAL SELECTION FOR WIRELESS TRANSACTIONS

## FIELD

This disclosure generally relates to wireless communications, including location-based wireless transactions.

## BACKGROUND

Electronic devices can include wireless capabilities to perform a variety of tasks such as wirelessly unlocking/locking a computer (or other device), wirelessly interacting with a television or other media device, and/or wirelessly conducting transactions. With respect to transactions, the wirelessly-enabled electronic device can store credentials corresponding to, for example, transit passes, identification, and credit/debit cards compatible with different payment types. For example, using a wireless communication protocol such as a near field communication (NFC) protocol, the electronic device can conduct a transaction with a nearby reader terminal using a stored credential that is compatible with the terminal.

## SUMMARY

The present disclosure provides apparatus, method and computer program product embodiments for selecting an appropriate credential based at least in part on a location of the electronic device.

In some embodiments, an electronic device includes a secure transaction subsystem and a processor. The secure transaction subsystem is configured to store a plurality of credentials. The processor is coupled to the secure transaction subsystem and configured to receive a poll (or polling) message from one or more radios, transmit a response message in response to the poll message, and receive location information. Based at least in part on the location information, the processor is configured to determine that a distance between the electronic device and a terminal is less than a predetermined distance. In response to the distance being less than the predetermined distance, the processor is configured to select a credential from the plurality of credentials. Further, selection of the credential can be based at least in part on the type of terminal. In some embodiments, the electronic device can provide an indication (e.g., to a user of the device) about the selection of the credential and/or request confirmation.

In some embodiments, another electronic device includes a secure transaction subsystem and a processor. The secure transaction subsystem is configured to store a plurality of credentials. The processor is communicatively coupled (directly or indirectly) to the secure transaction subsystem and configured to receive location information from one or more radios. Based at least in part on the location information, the processor is configured to determine that a distance between the electronic device and a terminal is less than a predetermined distance. In response to determining that the distance is less than the predetermined distance, the processor is configured to select a credential from the plurality of credentials. The selection can further be based at least in part on a type of terminal. In some embodiments, the other electronic device can provide an indication (e.g., to a user of the other device) about the selection of the credential and/or request confirmation.



In some embodiments, a method for selecting a credential from a plurality of credentials stored on an electronic device is disclosed. The method can include receiving a poll message from a first wireless radio. In response to receiving the poll message, the method includes sending a response message to the first wireless radio. The method also includes: (i) receiving location information from a second wireless radio, where the location information is based at least in part on the poll and response messages; (ii) determining that a distance between the electronic device and a terminal is less than a predetermined distance based at least in part on the location information; and (iii) in response to determining that the distance is less than the predetermined distance, selecting a credential from the plurality of credentials. The method also includes detecting that communication has been established between the electronic device and the terminal via a short-distance wireless radio on the electronic device. Further, the method includes, in response to establishing a communication between the electronic device and the terminal, initiating a transaction with the terminal via the short-distance wireless radio.

## BRIEF DESCRIPTION OF THE DRAWINGS/FIGURES

Embodiments of the present disclosure will now be described, by way of example only, with reference to the accompanying drawings in which corresponding reference symbols indicate corresponding parts. Further, the accompanying drawings, which are incorporated herein, form part of the specification and illustrate embodiments of the present disclosure.

FIG. **1** illustrates an example environment for wirelessly performing transactions, according to some embodiments.

FIG. **2** illustrates an example signaling flow for determining a location of an electronic device, according to some embodiments.

FIG. **3** illustrates an example electronic device, according to some embodiments.

FIG. **4** illustrates an example location server for determining a location of an electronic device, according to some embodiments.

FIG. **5** illustrates an example flowchart for selecting an appropriate credential, according to some embodiments.

FIG. **6** illustrates an example environment for a "fast track" transportation terminal application, according to some embodiments.

FIG. **7** illustrates an example flowchart for selecting an appropriate credential in a "fast track" transportation application, according to some embodiments.

FIG. **8** illustrates an example flowchart for determining a location of an electronic device for a wireless transaction, according to some embodiments.

FIG. **9** illustrates a functional block diagram of an example computer system, according to some embodiments.

Features and advantages of embodiments of the present disclosure will become more apparent from the detailed description set forth below when taken in conjunction with the drawings. In the drawings, like reference numbers generally indicate identical, functionally similar, and/or structurally similar elements.

## DETAILED DESCRIPTION

FIG. **1** illustrates an example environment **100** for wirelessly performing electronic transactions, according to some embodiments. For purposes of illustration, and not limita-